



**September 7, 2022**

Dear Colleagues,

We are very pleased to invite you and your collaborators to attend the face-to-face **CoEC Combustion Autumn School 2022**: Combustion theory with ML/AI applications and interactive analysis that will take place on October 24-26, 2022.

The school will be carried out face-to-face in Sofia, Bulgaria and is organised jointly by CERFACS (France), Barcelona Supercomputing Center (Spain), Institute of Combustion Technology (ITV) - RWTH Aachen University (Germany), Juelich Supercomputing Centre (Germany), Eindhoven University of Technology (Netherlands), Technical University of Darmstadt (Germany), and National Centre for Supercomputing Applications (Bulgaria) within CoEC (Center of Excellence in Combustion).

This is the second training course in a series of two CoEC schools that have been planned for 2022 as part of the [CoEC project](#). The three-day event is especially suited for graduate and Ph.D. students as well as junior researchers with a strong interest in fundamentals and current challenges in combustion, as well as the use of Machine Learning (ML) and High-Performance Computing (HPC) to approach simulations of turbulent reacting flows.



## What you will learn

- General description of chemical kinetics in flames and how to handle it in computations;
- Introduction to LES methods and applications;
- Presentation of soot formation in laminar and turbulent flames;
- Methodologies and challenges associated modelling various reacting particles like coal, aluminium, and iron;
- Presentation of HPC algorithms for combustion simulations;
- Introduction to AI and ML as well as ML and data driven modelling for turbulent reacting flows;
- Interactive exploration and analysis of large amounts of data with Jupyter: introduction, customisation and hands-on session.

For more information and [registration](#), please visit our [event page](#) on NCSA website. If you have any other questions, please feel free to contact us @

[g.prangov@ncsa.bg](mailto:g.prangov@ncsa.bg)

After more than two years of COVID-19 restrictions, we look forward to welcoming you personally to the CoEC Combustion Autumn School 2022!

Yours faithfully,

A handwritten signature in black ink, appearing to be 'DM', with a long horizontal stroke extending to the right.

**Dr. Daniel Mira**

*Coordinator and Technical Manager, Center of Excellence in Combustion;  
Senior Researcher and Head of the Propulsion Technologies Group at CASE  
Department, BSC*